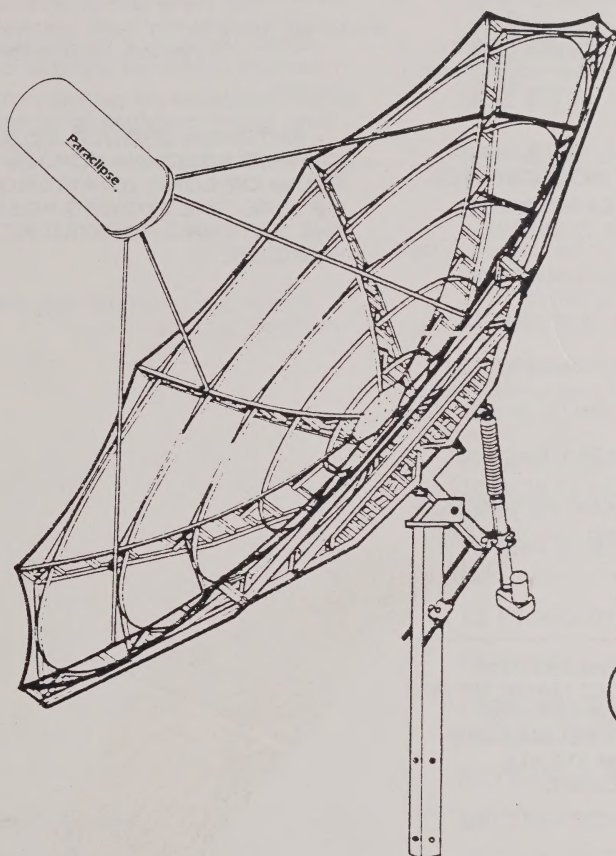


Paraclipse®

HIGH PERFORMANCE ANTENNAS

Your Complete Reflector Source



(12 PT shown)

Paraclipse®
CLASSIC
12 PT
10 Plus

**INSTALLATION &
ASSEMBLY INSTRUCTIONS**

FILL OUT WARRANTY CARD PROVIDED AND RETURN TO PARACLIPSE TO SECURE VALUABLE EXTENDED WARRANTY RIGHTS.

Welcome to the world of satellite television and your Paraclipse satellite antenna



This symbol is intended to alert you of the presence of unusually dangerous voltage within the unit's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



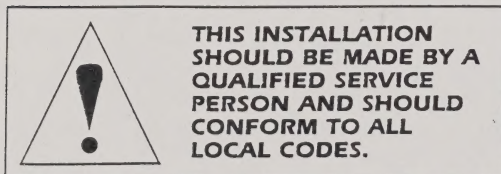
This symbol is intended to alert you of the presence of important operating and maintenance instructions in the literature accompanying the unit.

WE RECOMMEND THE FOLLOWING:

1. Site location: This is extremely important! We recommend that the site survey be performed by qualified personnel to ensure proper antenna location and to test for microwave interference.

2. Read the instructions thoroughly prior to assembly, so that you may become familiar with our method of installation.

3. Please keep this assembly instruction manual for future reference. The information below and inside this manual will help you when ordering replacement parts, and with questions you may have about your antenna.



**THIS INSTALLATION
SHOULD BE MADE BY A
QUALIFIED SERVICE
PERSON AND SHOULD
CONFORM TO ALL
LOCAL CODES.**

MAINTENANCE AND OPERATION:

The condition of your antenna should be checked at least once a year and after severe weather conditions. Replace or tighten any loose or missing hardware, watch for signs of rust on steel components and provide proper protection. Inspect weather protection for electronics and motor drive and perform any maintenance called for by motor drive manufacturer.

Check site location for any obstruction to movement of antenna and clear branches, etc. as needed.

ANTENNA SHOULD BE PLACED IN A STOWED POSITION FOR HEAVY STORMS, SNOW OR LONG UNATTENDED PERIODS OF TIME. THE STOWED POSITION IS WITH THE ANTENNA POINTED AT EITHER HORIZON.

Please fill out warranty card provided and return to Paraclipse.

Write the serial number of your antenna, the date of purchase, and the name, address and phone number of your Paraclipse dealer. Serial number can be found on ends of packaging boxes; on antenna mount; and on the packing list packed with the antenna.

Serial #: _____

Date purchased: _____

Dealer: _____

Telephone: _____

Paraclipse® CLASSIC

Manufacturer's Note

A home satellite antenna system is extremely difficult to correctly install without proper training and specialized equipment. It is therefore recommended that installation be done by an authorized dealer.

Before starting installation, check applicable local building codes and restrictions.

This assembly manual is written for the 10 Plus and 12 Plus series antennas. Any unique assembly differences within this manual will be noted by the following bold headings:

10 Plus 12 PT

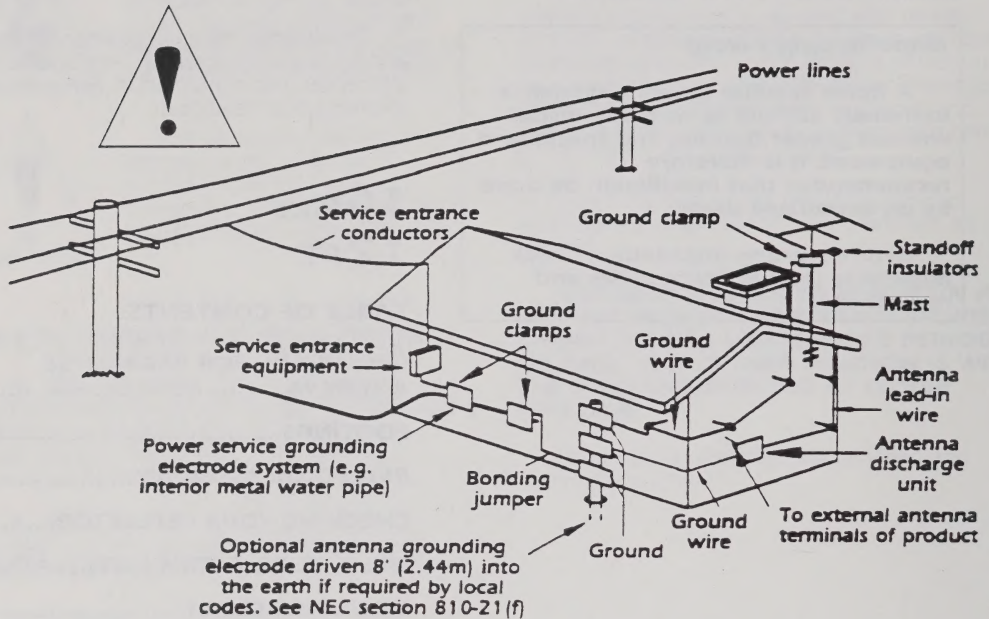
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NOTE: On assembly illustrations where circled numbers rather than part names are noted, please refer to pages 14 or 15 for part identification.

GROUNDING FOR PARACLIPSE ANTENNA

Example of antenna grounding according to National Electric Code instructions contained in article 810 "Radio and Television Equipment. *"

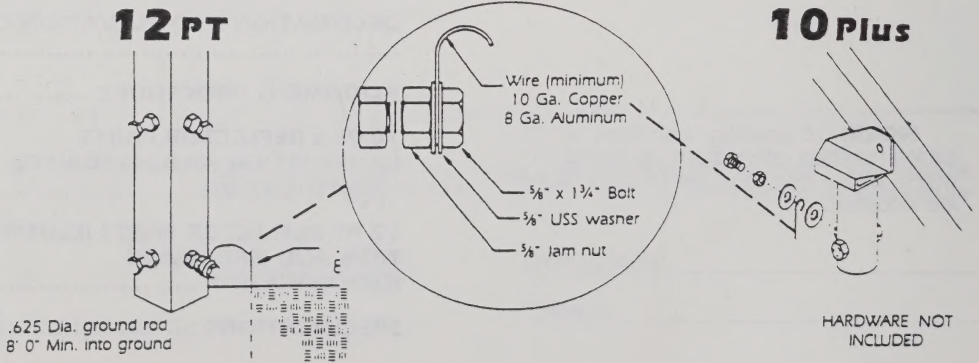


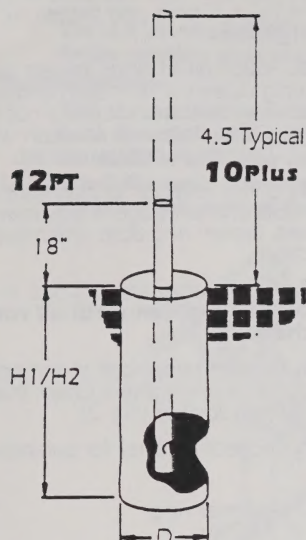
1. Use #10 AWG (5.3mm) copper, #8 AWG (8.4mm) aluminum, #17 AWG (1.0mm) copper-clad steel or bronze wire, or larger, as a ground wire. Use a 0.625" ground rod 8' minimum into ground.

2. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4' - 6' (1.22 - 1.83 m) apart.

3. Mount antenna discharge unit as close as possible to where lead-in enters house.

4. Use jumper wire not smaller than #6 AWG (13.3mm) copper, or equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21 (i).





D	Diameter of hole
H1	Depth of hole, natural soil
H2	Depth of hole, paved soil

1. The hole for the antenna footing should be dug in accordance with the chart below in order to adequately support the antenna during violent weather, hard freeze, or muddy conditions. The 3" schedule 40 base pipe must be mounted absolutely plumb in concrete.

2. For a hole depth over 3 feet we recommend using reinforcing bar in the concrete.

3. Above ground requirements:

12 POLAR T: 18" minimum.

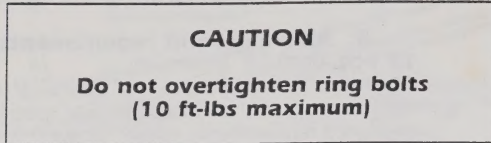
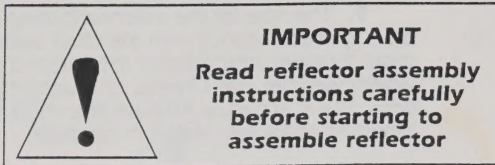
10 PLUS: For most areas, 4'6" of 3½" O.D. pipe above the ground is all that is needed. For special clearance requirements (snow, uneven terrain, etc.) add the needed clearance requirement to the standard 4'6" to determine above ground measurement.

soil type:	soft	medium	hard	rock
80-85 mph wind force				
D	19"	19"	14"	12"
H1 (natural soil)	4'6"	3'6"	3'6"	2'0"
H2 (paved soil)	3'0"	3'0"	2'6"	2'0"
90-95 mph wind force				
D	19"	19"	14"	12"
H1 (natural soil)	5'6"	5'6"	4'6"	2'0"
H2 (paved soil)	3'6"	3'6"	3'0"	2'0"

soil reference:

soft : clayey silts, sandy clays, or silty clays
medium : medium dense sand, silty sand, or clayey sand
hard : sandy gravel or gravel
rock : fractured or solid sandstone or better

NOTE: The soil type determination shall be made by the antenna installer.



1. Bolt the eight ribs to the back hub plate using sixteen $\frac{3}{16}$ " x 2" bolts, sixteen $\frac{3}{16}$ " nuts and sixteen $\frac{1}{4}$ " USS washers (Fig. 1) **Do not tighten.**

2. Bolt the front hub plate to the ribs using sixteen $\frac{3}{16}$ " x 1" bolts and sixteen $\frac{3}{16}$ " nuts. **Do not tighten.**

3. Attach all #1 rings (largest outside) to the ribs using sixteen $\frac{1}{4}$ " x 1" bolts and sixteen $\frac{1}{4}$ " nuts. Tighten ring bolts being careful not to overtighten. Check that rings are flush with rib surface (Fig. 2). Tighten all hub plate bolts.

4. Check reflector for parabolic accuracy using tests on next page. If adjustments are required, loosen ring bolts and make necessary corrections.

5. Attach remainder of rings, in any order, to ribs. **Do not tighten until all rings are attached.**

6. Tighten remainder of ring bolts, being careful not to overtighten. Check that rings are flush with rib surface (Fig. 2).

7. Recheck reflector for parabolic accuracy.

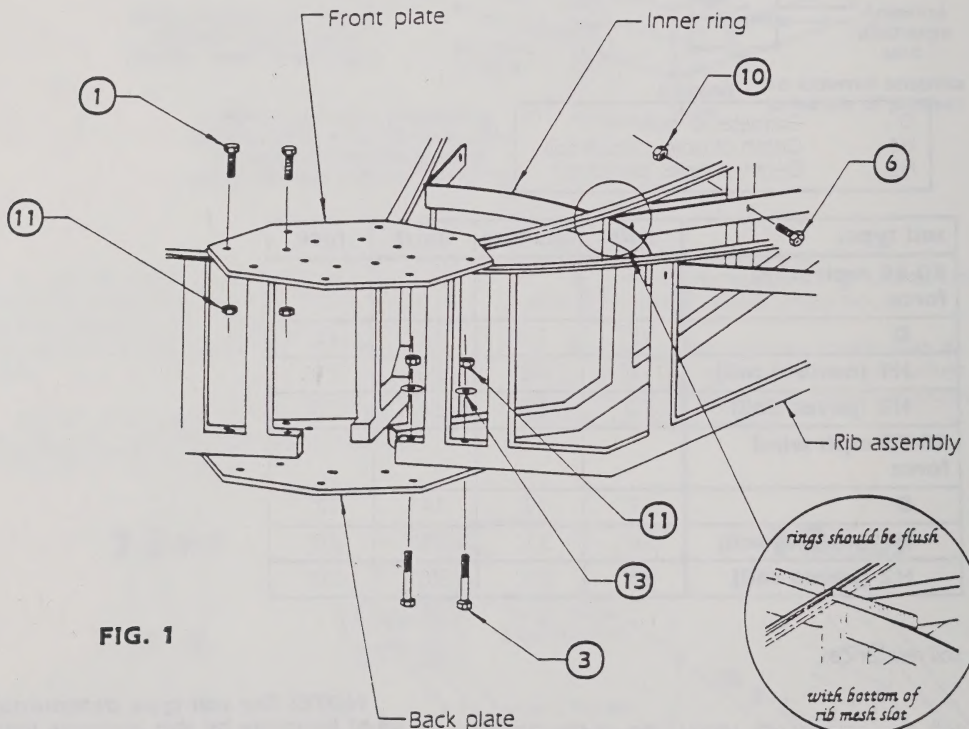


FIG. 1

FIG. 2

For a complete listing of nuts, bolts, and other hardware, please see identification tables on pages 14 and 15

PARABOLIC INTEGRITY

A precise parabolic surface that is both accurate and symmetrical is a must for good antenna performance. The design of the antenna structure must not allow for any change in the shape of the reflector. The reflector cannot elongate, warp or sag if it is to maintain its picture quality.

MEASURING TEST

With an accurate tape measure, measure from the outside of the largest ring across the face of the dish to the outside of the largest ring opposite the measuring point (Fig. A). Repeat this step, measuring completely around the reflector making sure the measurements are consistent.

STRING TEST

With a ball of string and some masking tape you can check the antenna for symmetry. Find at least four identical spots on the antenna and run lengths of string to the opposite side. Where the strings cross each other there should be a perfect intersection. The intersection of the string should be perfectly aligned without horizontal or vertical gaps or tension (Fig. A).

STRAIGHT EDGE TEST

When you inspect the assembled antenna, lay an imaginary straight edge across the top of the outside ring, close one eye, and sight across the reflector. If you notice a deviation along this edge, you can be certain that the reflector does not have an accurate parabolic shape (Fig. B).

Remember, a total variation of only $\frac{3}{8}$ " from side to side is enough to seriously compromise your picture quality. If you can flex the antenna with your hands, you can be sure mother nature will be flexing it every day for you.

ADJUSTMENTS

If any of the above tests show that the dish was incorrectly assembled, loosen the ring bolts (and hub plate bolts if necessary) and make necessary adjustments.

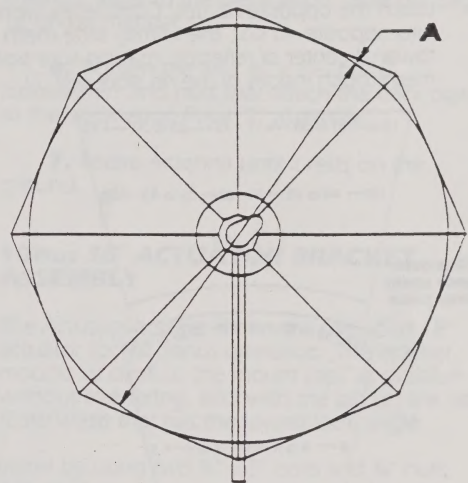


FIG. A

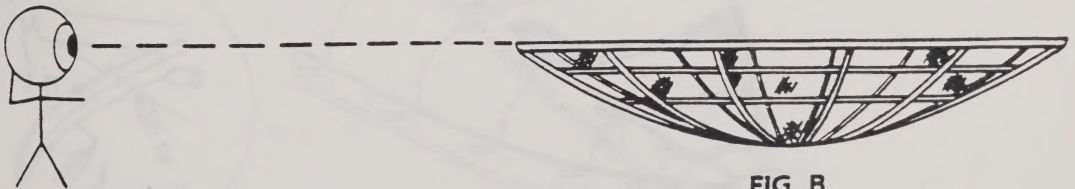


FIG. B

MESH, CLIPS & TRIM INSTALLATION

Read all instructions carefully prior to beginning mesh installation.

NOTE: The diagrams shown for clip installation are for reference only. The actual numbers of clips required will vary; one clip every 3" to 4" is typical. Mesh must be held firmly against the ribs and rings.

1. Inner Mesh Installation: Lay mesh (**inside piece first**) on rings. Starting with one side of mesh, slide mesh into slot on top of rib. Once one side of mesh has been completely installed into slot, slide mesh towards center of reflector until the other side of mesh begins to touch the opposite rib slot. Completely work mesh into opposite rib slot, then firmly slide mesh towards center of reflector, making sure sides of mesh touch insides of the rib slots (Fig. 7).

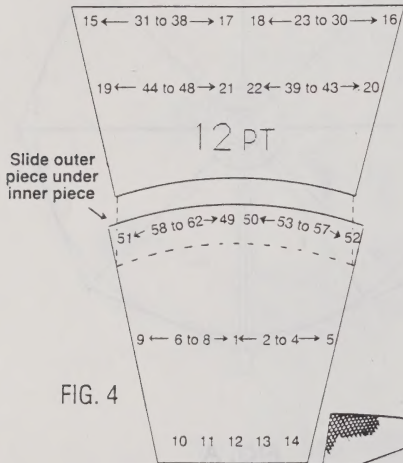


FIG. 4

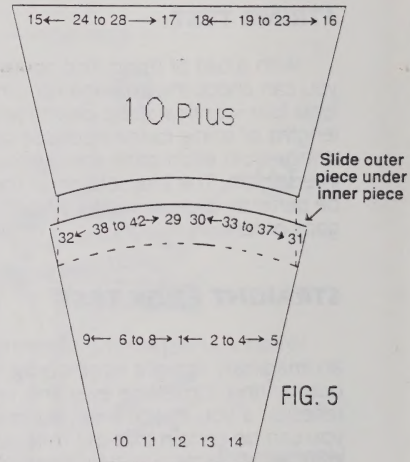


FIG. 5



FIG. 7



FIG. 8

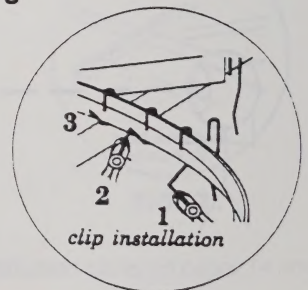
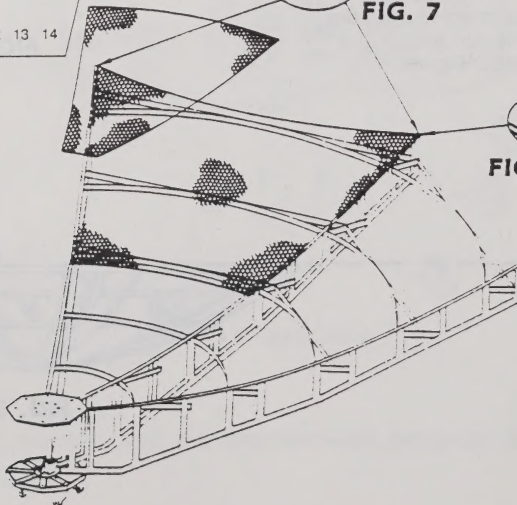


FIG. 6

2. Clip Installation: After a piece of inner mesh is in place, install clips using the clip installation sequence shown in Figure 5. When installing clips, firmly pull downward and around the ring making sure the clip is square to the ring (Fig. 6).

NOTE: There is one ring that will not be clipped until outer mesh is in place.

3. Outer Mesh Installation: Install outer mesh as per step 1 above making sure to slide **under** inner mesh where the two pieces of mesh overlap.

4. Continue steps 1, 2 and 3 until antenna is completely meshed.

5. When antenna meshing is completed, install outside mesh trim. With the flat side up (Fig. 8) work the mesh trim onto the edge of the mesh panel. Trim excess with side-cutting pliers.

This assembly consists of a Mount, Declination/Polar "T" Assembly, and E-Z Adjustment Rods. (See page 8 for 10Plus or page 9 for 12PT.)

1. Attach the Declination/Polar "T" Assembly to the top of the Mount, using the $\frac{3}{8}$ " x $3\frac{1}{2}$ " bolt, lockwasher and nut provided in the hardware package.

2. Assemble the E-Z Adjustment Rods and attach to the Polar "T" Assembly with $\frac{5}{8}$ " x 8" bolt, lockwasher and nut. Attach E-Z Bracket to the Mount with $\frac{1}{2}$ " x 2" bolt. One rod may be left off or disconnected from the Mount while the antenna is being aligned.

3. After the concrete has set up, slide the mount assembly over the 3" (schedule-40) pipe.

4. Find true north/south. This usually can be accomplished by observing a compass and adjusting for the magnetic deviation in your area. Local magnetic deviation may be determined by inquiring at the nearest airfield or by consulting a topographic or "Quad" map of your area available at most engineering supply or supporting goods outlets. Using your compass, adjust the front of the Mount to true south.

ANTENNA TO MOUNT ASSEMBLY

1. Set Polar "T" elevation to 10 degrees with E-Z Rods.

2. Carry the Antenna to the front of the Mount, rest the tip of the bottom Rib on the

ground (be sure to protect the tip of the bottom Rib with cardboard or plywood, etc.).

3. Slide the Antenna back to the Mount (while it is still resting on the tip of the Rib) and line up the mounting holes in the Back Hub Plate of the dish to the mounting holes on the Declination/Polar "T" assembly.

4. Insert the lower bolts first, using two $\frac{3}{8}$ " x $1\frac{1}{2}$ " bolts, lockwashers and nuts. Then align the upper mounting holes. Install upper bolts, using two $\frac{3}{8}$ " x $1\frac{1}{2}$ " bolts, lockwashers and nuts.

5. The declination shims can now be installed. Refer to the Declination Table on page 12 of this manual.

6. Tighten the four $\frac{3}{8}$ " x $1\frac{1}{2}$ " bolts, lockwashers and nuts that attach the back plate to the declination Polar "T" assembly.

7. Rotate Antenna until it rests on the ground.

10Plus 18" ACTUATOR BRACKET ASSEMBLY

The Actuator bracket allows the use of an 18" actuator for full conus operation. The bracket mounts as close to the mount caps as possible without interfering, and with the tab on the side (East/West) that has the lowest look angle.

Install by using two $\frac{3}{8}$ " x 3" bolts and $\frac{3}{8}$ " nuts provided.

MOUNT PARTS ILLUSTRATION 10Plus

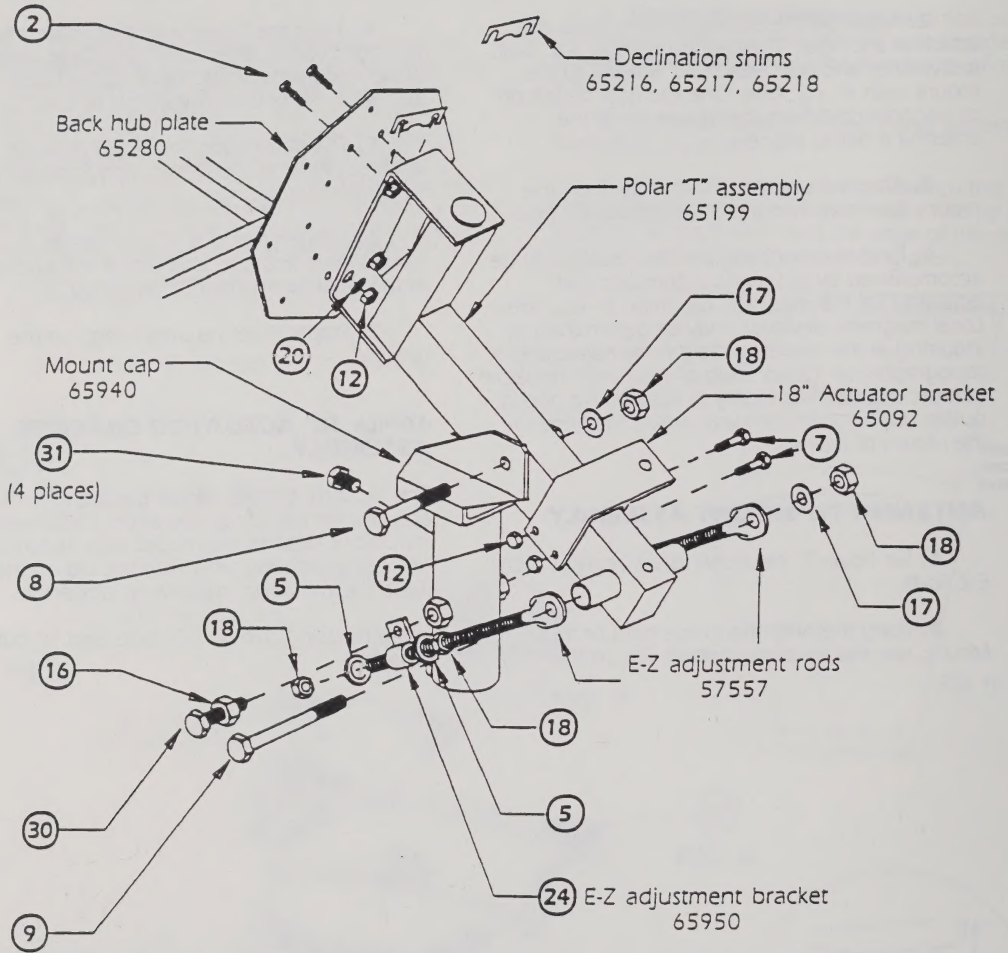


FIG. 9

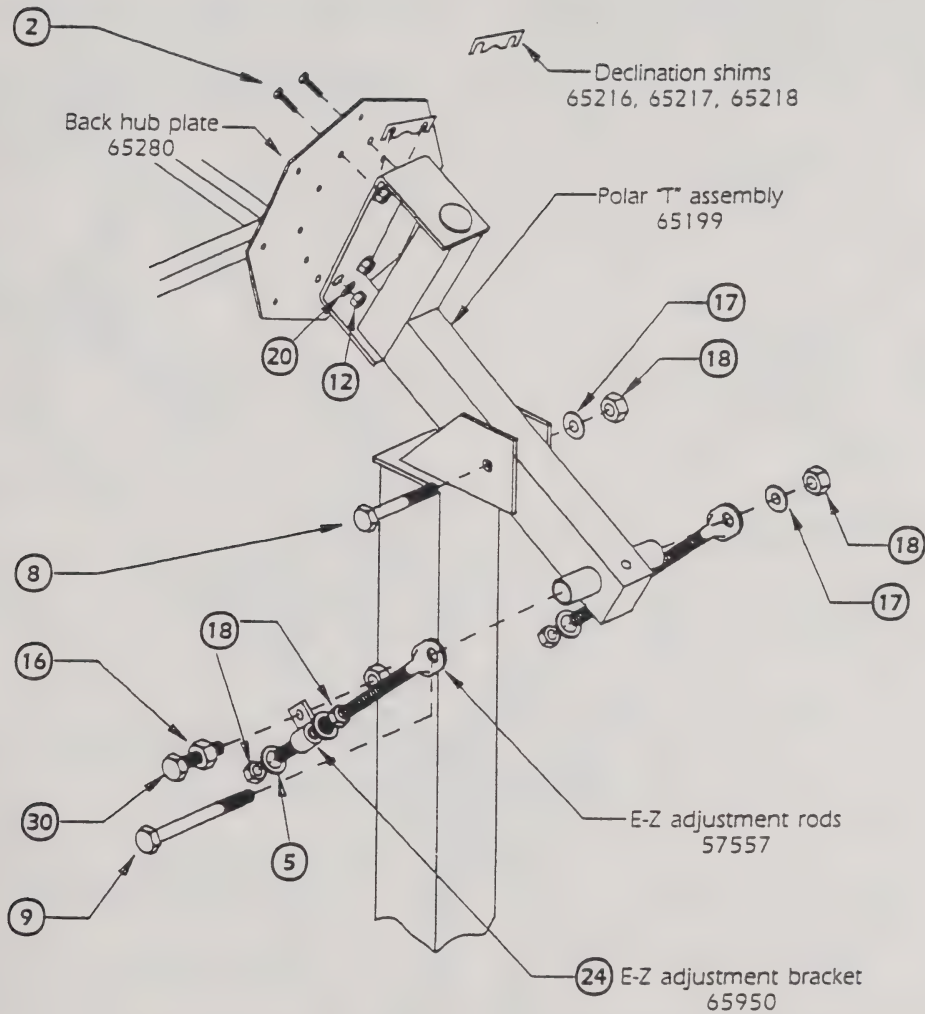


FIG. 10

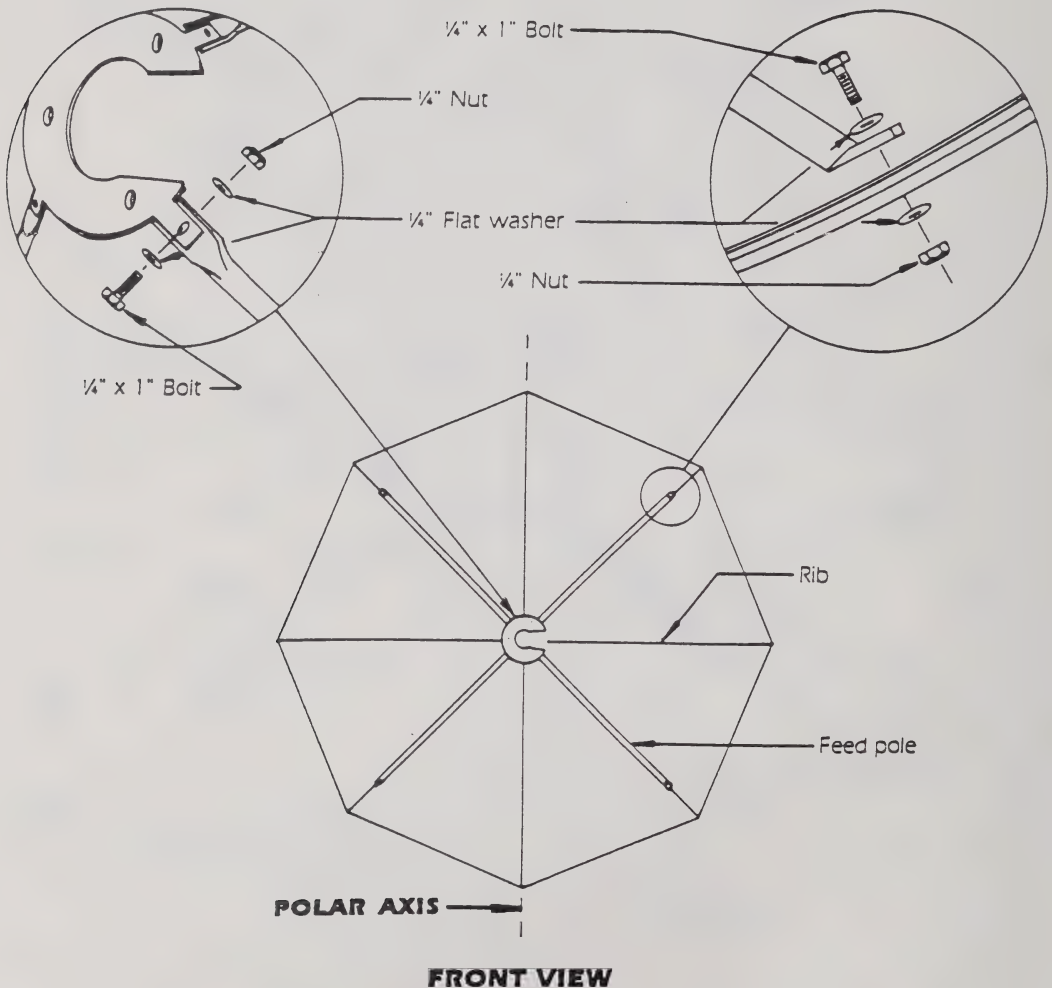
FEED POLE INSTALLATION

1. Assemble feedhorn according to manufacturer's instructions.

NOTE: Feed pole rib mounting locations will vary from feed to feed depending on feed offset angle with respect to the polar axis. Mount feed poles and feed plate on ribs which suitably accommodate the individual feed offset angle. Figure shown below will suffice in most cases.

2. Attach feed poles to ribs using four $\frac{1}{4}$ " x 1" bolts, eight $\frac{1}{4}$ " flatwashers and four $\frac{1}{4}$ " nuts.

3. Attach feed plate to feed poles using four $\frac{1}{4}$ " x 1" bolts, eight $\frac{1}{4}$ " flatwashers and four $\frac{1}{4}$ " nuts.



FEED HORN AND COVER INSTALLATION

1. Attach feed horn and cover doughnut to feed plate using three $\frac{1}{4}$ " x $2\frac{1}{2}$ " bolts, three $\frac{1}{2}$ " x 1" nylon thumb screws (thread into feed plate), three $\frac{1}{4}$ " nyloc nuts, six $\frac{1}{4}$ " flatwashers and three $\frac{1}{4}$ " nuts.

2. Attach cables to a feed pole and the back of a rib using seven cable ties.

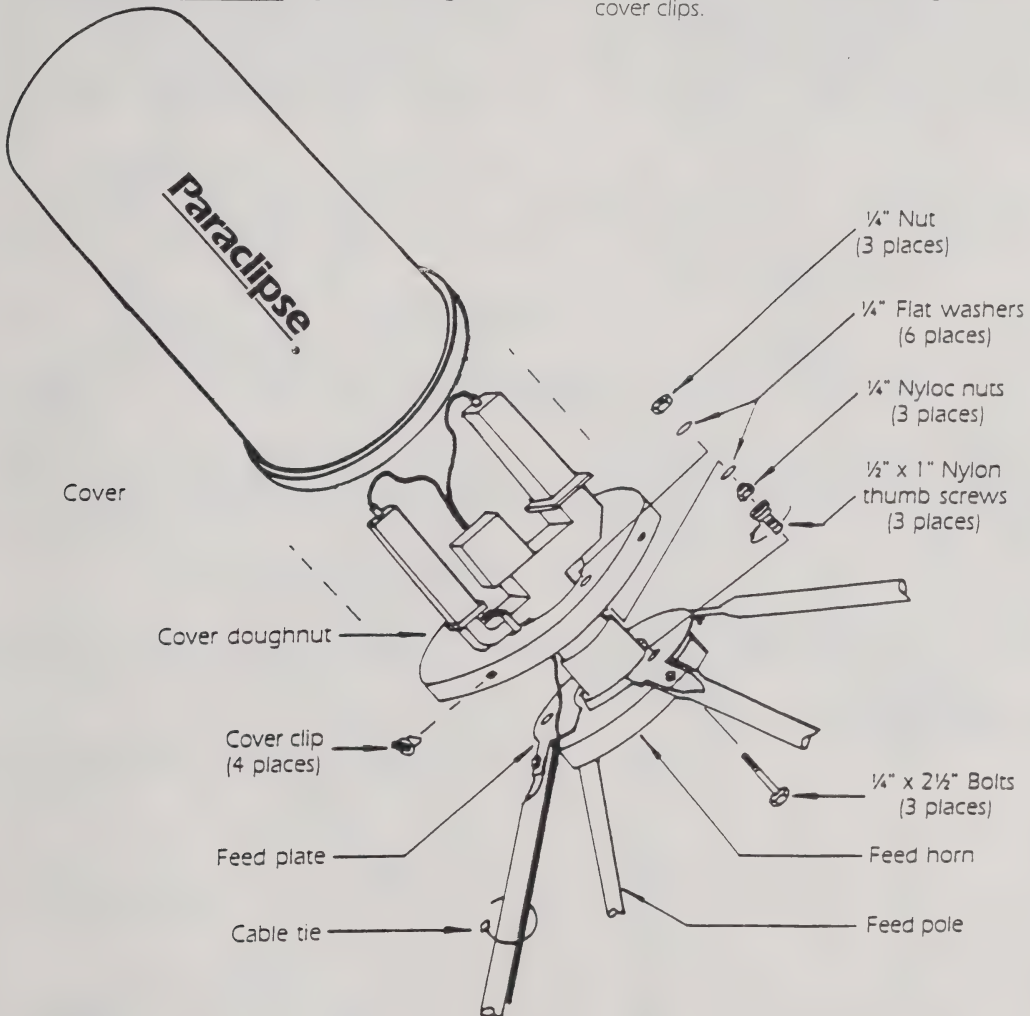
3. Center feed in antenna. Equal measurement to all ribs is a must. Adjust focal length.

Focal length is measured from the top of the front hub plate to specifications stated by feed horn manufacturers. Focal distance is measured from the top of the front plate to the feed horn wave guide.

Focal Length F/D Ratio

10'	Antenna	42 $\frac{3}{8}$ "	.352
12'	Antenna	53 $\frac{3}{8}$ "	.375

4. Attach cover to cover doughnut using four cover clips.



ACTUATOR INSTALLATION AND DECLINATION AND ELEVATION CHART



This antenna should be used with a 36 volts actuator rated for antennas with up to 250 lbs reflector weight. Actuator thrust should be 500 lbs minimum.

ACTUATOR RIB BRACKET INSTALLATION

1. The brackets are attached approximately 15" from the edge of the back plate on the center rib. (Left or right), that has the lowest look angle (see Fig. 11). Straddle the rib strut with the rib bracket plates and fasten them to the rib using three $\frac{3}{16}$ " x 2" bolts, three $\frac{3}{16}$ " flatwashers and three $\frac{3}{16}$ " nyloc nuts (see Fig. 12).

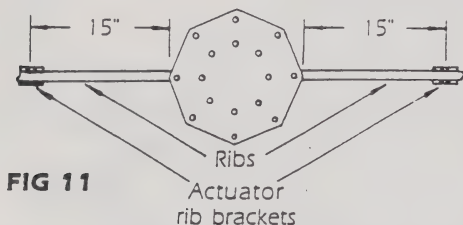


FIG 11

DECLINATION AND ELEVATION CHART

Declination is the offset of an antenna to the polar axis. It can be measured as the angle between points A and B in the figure below. To adjust, install shim(s) on either the top two back hub plate to Polar "T" bolts or bottom two back hub plate to Polar "T" bolts as required to achieve the correct declination angle. Tighten all associated hardware. The antenna is preset with approximately 4° declination. The $\frac{1}{16}$ " shims equal 1° of

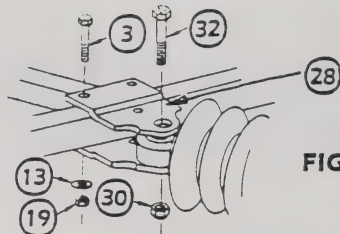


FIG 12

ACTUATOR INSTALLATION

1. Attach the lower end of the actuator to the Polar "T" using one $\frac{1}{2}$ " x $2\frac{3}{4}$ " bolt, two $\frac{1}{2}$ " flatwashers, one $\frac{1}{2}$ " nyloc nut and a standard actuator clamp (not supplied). See Fig. 13.

2. Attach the upper end of the actuator to the actuator rib brackets using one $\frac{1}{2}$ " x 2" bolt and one $\frac{1}{2}$ " nyloc nut (see Fig. 12).

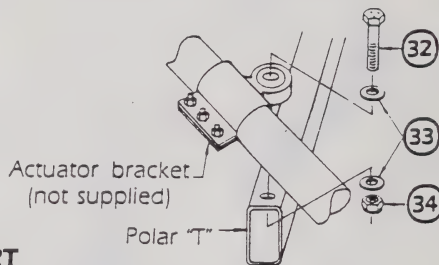


FIG 13

adjustment, the $\frac{1}{16}$ " shims equal $\frac{1}{2}$ ° of adjustment and the $\frac{1}{32}$ " shim equals $\frac{1}{4}$ ° of adjustment. Using an inclinometer and the guidelines below, adjust the declination angle and polar axis angle (elevation) for your installation location. Elevation can be adjusted using the threaded E-Z adjustment rods (see pages 8 or 9).

**Polar Axis Angle
(Equal to
Installation Site
Latitude)**

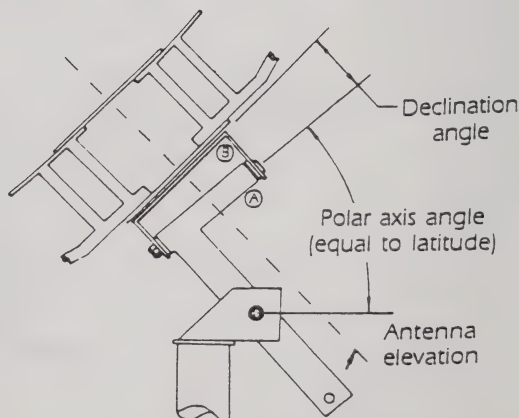
(A)

0
5
10
15
20
25
30
35
40
45
50
55
60
65
70

**Declination
(In Degrees)**

(B)

.0
.76
1.51
2.26
2.98
3.68
4.34
4.97
5.56
6.11
6.61
7.05
7.45
7.78
8.06



1. Set antenna elevation. The elevation will vary with the latitude of your location. Use the Declination & Elevation chart as a guideline.

2. It is necessary to search for the most southerly satellite from your location. (Refer to a "Satellite Guide" or consult your nearest dealer.)

Begin with the antenna pointed in a southerly direction (for antenna location sites in northern hemisphere) or northerly direction (for antenna sites in southern hemisphere). To begin searching turn your receiver on to scan-tune (if your receiver is not so equipped, have someone slowly tune the receiver through the transponders). Next, turn the antenna slightly in the direction of the satellite.

3. Systematically search for the satellite by making one-turn-at-a-time adjustments of the elevation using the EZ adjustment rods. With each adjustment of elevation, slowly swing the antenna, using the motor drive, from east to west, while looking for a signal on your television.

NOTE: If no signal can be found, re-check the antenna elevation/declination, north/south alignment and plumb of mount. If no problem is found with the mechanical alignment, consult the owner's manual for your receiver or call your local dealer.

4. When you find your first satellite, turn off the scan-tune and adjust to an active transponder (channel).

5. Carefully adjust elevation and azimuth to maximum signal strength using the signal strength meter on your receiver; or, if available, use a digital or analog volt-ohm meter (VOM). You may also adjust visually by observing your television for the best picture.

6. Turn on scan-tune once again and swing antenna, using the motor drive, looking for other

satellites. If no other satellites are "visible," or you cannot receive all the satellites (and your signal path is not blocked), the mount is not aligned to true north/south.

7. North/south alignment:

NOTE: If installation is located east of 105° W longitude, reverse all "west/east" and "raise/lower" references.

a) Swing antenna to the most westerly satellite and adjust azimuth and elevation for absolute maximum signal. Swing antenna to the most easterly satellite and do same. If any azimuth or elevation adjustment is required to peak signal on this satellite the north/south alignment will still need minor correction.

b) If you raise the antenna with the EZ adjustment rods to improve the picture, rotate the mount slightly (a fraction of an inch) counterclockwise. If you lower the antenna to improve the picture, rotate the mount slightly clockwise.

c) Repeat steps a) and b) until there is no adjustment needed from the most westerly to the most easterly satellites.

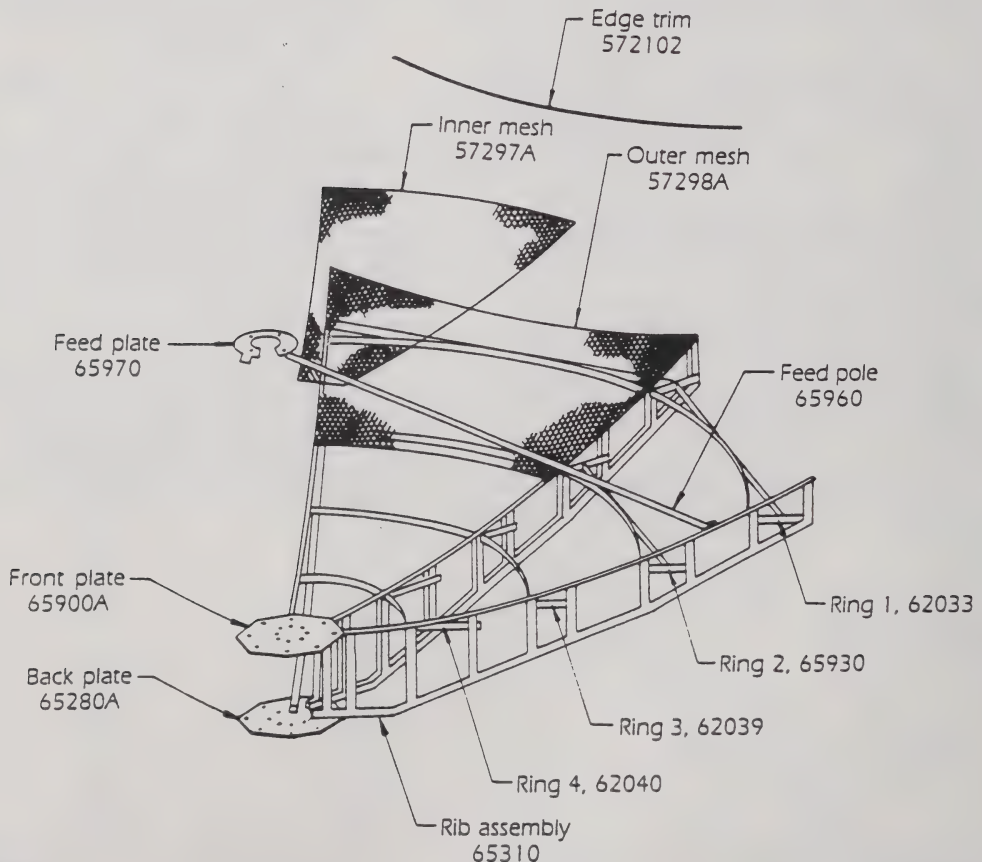
8. While observing a signal strength meter or watching the television picture, retighten all nuts and bolts on the mount firmly to ensure that the signal remains at maximum. Recheck antenna tracking from west to east to make sure the mount has not moved.

Your Paraclipse antenna is now aligned to track the Clarke orbit belt.

Complete your wiring to the television viewing location per instructions provided with your receiver.

10 PLUS HARDWARE TABLE

FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D	FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D
1	52081	$\frac{3}{16}$ " x 1" NC BOLT ZP	17	18	52073	$\frac{3}{8}$ " NC NUT ZP	6
2	55222	$\frac{3}{8}$ " x $1\frac{1}{2}$ " NC BOLT ZP	4	19	52020	$\frac{3}{16}$ " NC NYLOC NUT ZP	3
3	55061	$\frac{3}{16}$ " x 2" NC BOLT ZP	20	20	52189	$\frac{3}{8}$ " LOCKWASHER ZP	4
4	65150	FEED POLE HDWR KIT	1	23	65276	J-CLIPS	400
5	55076	$\frac{3}{8}$ " FLATWASHER ZP	4	24	65950	E-Z ADJUSTMENT BRACKET	2
6	52175	$\frac{1}{4}$ " x $1\frac{1}{4}$ " NC BOLT ZP	68	25	65218	$\frac{1}{32}$ " SHIM	1
7	55161	$\frac{3}{8}$ " x 3" NC BOLT ZP	2	26	65217	$\frac{1}{16}$ " SHIM	2
8	52179	$\frac{3}{8}$ " x $3\frac{1}{2}$ " NC BOLT ZP	1	27	65216	$\frac{1}{8}$ " SHIM	3
9	57565	$\frac{3}{8}$ " x 8" NC BOLT ZP	1	28	65126	RIB BRACKET	2
10	56110	$\frac{1}{4}$ " NC NUT ZP	68	30	55275	$\frac{1}{2}$ " x 2" NC BOLT ZP	3
11	52183	$\frac{3}{16}$ " NC NUT ZP	32	31	52091	$\frac{1}{2}$ " x 1" NC BOLT ZP	4
12	52188	$\frac{3}{8}$ " NC NUT ZP	6	32	55110	$\frac{1}{2}$ " x $2\frac{3}{4}$ " NC BOLT ZP	1
13	52019	$\frac{1}{4}$ " USS FLATWASHER ZP	25	33	52213	$\frac{1}{2}$ " FLATWASHER ZP	2
16	52089	$\frac{1}{2}$ " NC NUT ZP	2	34	55255	$\frac{1}{2}$ " NYLOC NUT ZP	2
17	52185	$\frac{3}{8}$ " LOCKWASHER ZP	2				

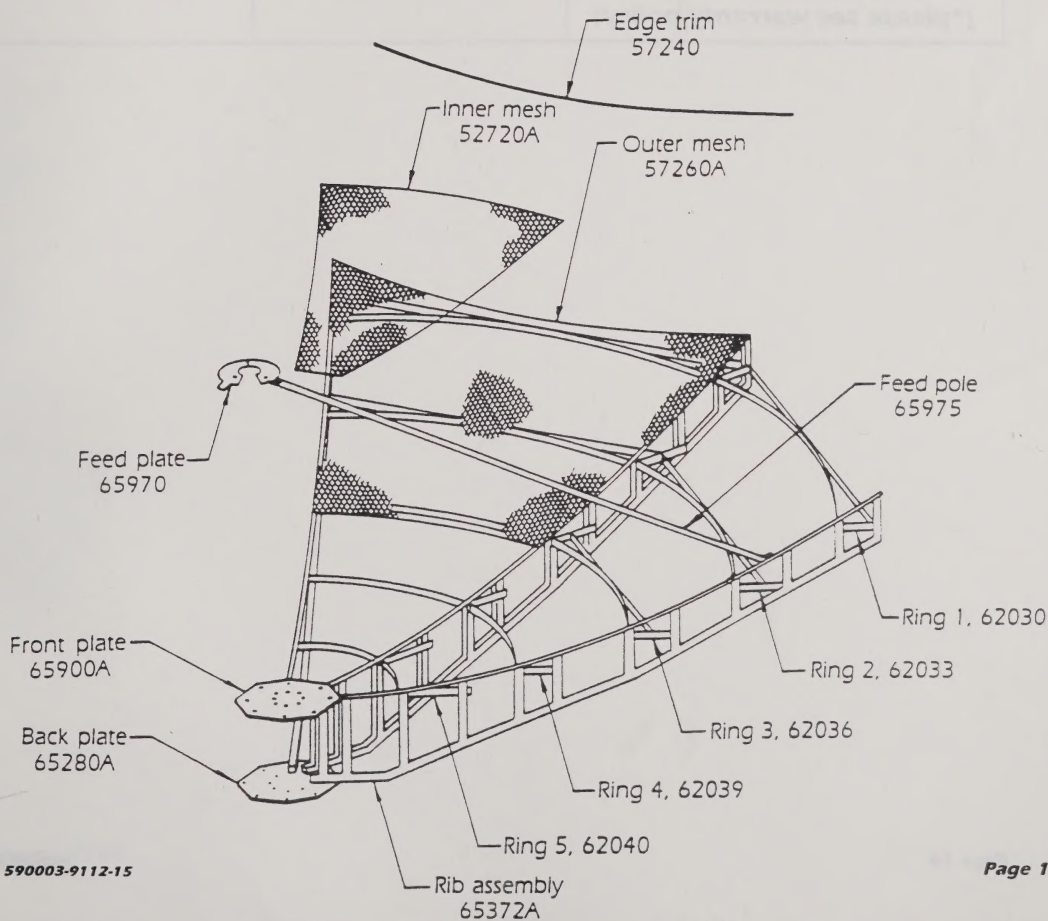


RIB, RING AND MESH ASSEMBLIES WITH CORRESPONDING PART NUMBERS

12 PT

12 PT HARDWARE TABLE

FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D	FIG. NO.	PART NO.	DESCRIPTION	PIECES REQ'D
1	52081	3/16" x 1" NC BOLT ZP	17	17	52185	3/4" LOCKWASHER ZP	2
2	55222	3/8" x 1 1/4" NC BOLT ZP	4	18	52073	3/8" NC NUT ZP	6
3	55061	3/16" x 2" NC BOLT ZP	20	19	52020	3/16" NC NYLOC NUT ZP	3
4	65150	FEED POLE HDWR KIT	1	20	52189	3/4" LOCKWASHER ZP	4
5	55076	3/8" FLATWASHER ZP	4	22	57806	5/8" NC JAM NUT ZP	1
6	52175	1/2" x 1 3/4" NC BOLT ZP	82	23	65275	J-CLIPS	600
7	55131	3/8" x 1 3/4" NC BOLT ZP	1	24	65950	E-Z ADJUSTMENT BRACKET	2
8	52179	3/8" x 3 1/2" NC BOLT ZP	1	25	65218	1/2" SHIM	1
9	57565	3/8" x 8" NC BOLT ZP	1	26	65217	3/16" SHIM	2
10	56110	1/2" NC NUT ZP	90	27	65216	1/4" SHIM	3
11	52183	3/16" NC NUT ZP	32	28	65126	RIB BRACKET	2
12	52188	3/8" NC NUT ZP	4	30	55275	1/2" x 2" NC BOLT ZP	3
13	52019	1/4" FLATWASHER ZP	25	31	55110	1/2" x 2 1/4" NC BOLT ZP	1
15	55076	3/8" FLATWASHER ZP	2	32	52213	1/2" FLATWASHER ZP	2
16	52089	1/2" NC NUT ZP	2	34	55255	1/2" NYLOC NUT ZP	2



SPECIFICATIONS

	10Plus	12PT
C Band gain	40.2 dbi	42.3 dbi
KU Band gain	49 dbi	50.0 dbi
C Band efficiency	65%	70%
2° Spacing approved (C & KU)	Yes	Yes
C Band 3dB beam width	0.56°	1.3°
C Band first side lobe	-19.0 dB	-20.4 dB
C Band antenna temperature	35°K	24°K
F/D	0.352	0.375
FP	42 3/8" (approx.)	53 3/8" (approx.)
Wind survival (*please see warranty policy)		

Paraclipse[®]

HIGH PERFORMANCE ANTENNAS

Your Complete Reflector Source

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